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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,769	01/25/2001	Avishai Keren	14531.107.1.I	7768
47973	7590	11/17/2005	EXAMINER	
WORKMAN NYDEGGER/MICROSOFT 1000 EAGLE GATE TOWER 60 EAST SOUTH TEMPLE SALT LAKE CITY, UT 84111			SHANNON, MICHAEL R	
			ART UNIT	PAPER NUMBER
				2614

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/770,769	KEREN ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Michael R. Shannon	2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 02 September 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 17-21,23,24,26-28,30-32 and 41-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 17-21,23,24,26-28,30-32 and 41-44 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                               |                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                          | Paper No(s)/Mail Date. _____ .                                              |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20050902</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|                                                                                                                                               | 6) <input type="checkbox"/> Other: _____ .                                  |

## DETAILED ACTION

### ***Response to Arguments***

Initially, the Examiner would like to thank the Applicants' attorneys for the time and patience taken during the recent interview held on August 24, 2005. As promised, the claim amendments and arguments submitted in the reply to the previous office action are consistent with the amendments and arguments presented during the interview.

1. Applicant's arguments filed on September 2, 2005 have been fully considered but they are not persuasive. After a further, more detailed review of the applicant's specification and the art of record, it has been decided that the claim amendments (as discussed in the interview, and tentatively agreed upon) do not overcome the art of record. The following is an analysis of how this decision was reached by the Examiner.

The arguments presented in the interview and the current remarks relate to the fact that the display commands are degraded AND THEN converted into compressed video streams for transmission. While the Examiner did tentatively agree that this argument/limitation would patentably distinguish the claims over the prior art, this agreement took place before the Examiner could thoroughly examine the specification and the cited art of record (namely, Richardson). Firstly, paragraph [0183] of the Applicant's disclosure (as cited in the remarks) teaches the modifiable parameters available for trading off image quality of the display commands and bandwidth. Some of the parameters that can be modified in order to conserve bandwidth and degrade the display commands are: frame rate, DCT coefficient sampling resolution, color

modifications, a desired image quality, etc.... Nowhere does the specification state that the degradation and the compression are clearly defined, separate steps, as seems to be claimed in currently amended independent claims 17, 20, and 26. The specification does not disclose a distinct degradation module and a distinct video compressor. As far as the Examiner can tell from the specification, the MPEG II Compressor 34 performs both of these functions. Referring to Figure 3, the adjustments for image display and image compression are both done in order to result in MPEG II data 70. Compression and degradation, therefore, go hand-in-hand. Paragraph [0166] clearly states that degradation is the result of compression. Therefore, the Examiner does not see sufficient evidence in the specification that the degradation module and the video compressor are two separate and distinct features that perform functions separately from each other. Therefore, the Richardson reference still holds as a valid rejection to the claim.

The Richardson reference, as discussed previously, teaches that the server can choose the encoding method that is most appropriate for the particular screen content being transmitted and the available network bandwidth. Furthermore, Richardson teaches that the slower the client and the network, the lower the rate of updates. In other words, varying the frame rate will result in a lower rate of updates in order to conserve bandwidth due to a slower network [Adaptive Update section of Richardson]. Also, Richardson clearly states, "the encoding actually used on a given connection can be negotiated according to the capabilities of the server and client and the connection between them" [A Single Graphics Primitive section of Richardson]. In other words, the

encoding (degrading as a result of compressing) can be varied based on the connection and bandwidth capability.

In view of the above revelations and response to the argument, the previous rejection still stands and has been copy and pasted below with minor changes made to reflect current claim amendments.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 17-21, 23-24, 26-28, 30-32, and 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (US 6,202,211), cited by examiner, in view of Richardson et al (VNC), cited by examiner.

Regarding claim 17, the claimed "remote computing server system that includes a server that provides remote client access to one or more programs that are run at the server, remotely from one or more client systems, and wherein the server converts display commands generated from the one or more programs into compressed video streams" is met as follows:

- The claimed "server, executing a plurality of programs, each of which generates a set of display commands which represent a user interface for each of said plurality of programs" is met by Williams, wherein he teaches

a server, which maintains multiple active desktops and applications for display at remotely located STB/TV combinations [col. 3, lines 31-46].

- The claimed “degradation module for degrading the plurality of sets of display commands responsive to transmission bandwidth limitations that are identified by the server” is not expressly disclosed by Williams, as discussed above. However, the Richardson reference does teach the degradation limitation. The Richardson reference teaches different encoding techniques, which are used for various video encoding schemes for rendering desktops and other applications generated at a server on a display of a client. Richardson teaches that a connection speed (connection capability) is analyzed and an encoding scheme is chosen based on the capability of the connection from server to client. This means that an encoding scheme that degrades the content of the video (as many encoding scheme's do, in order to save bandwidth, therefore making it more acceptable for a lower bandwidth connection) could be used based on the connection's capabilities. Also, the usage of the word “negotiated” by the Richardson reference means that the encoding scheme, and therefore, the quality of the video could be negotiated (varied) according to the capability of the connection. For example, the Richardson reference talks about copy-rectangle encoding, which copy's portions of the video signal instead of using raw data signal, in order to conserve bandwidth. The copying of portions of the video signal degrades

the signal from its original raw data and therefore conserves bandwidth when the image is transmitted to the client. It would have been obvious to one of ordinary skill in the art at the time of the invention to degrade the plurality of sets of display commands responsive to the transmission bandwidth limitation, in order to save bandwidth and to send compressed encoded video streams faster than raw data streams.

- The claimed “video compressor which receives the degraded plurality of sets of display commands from the degradation module and generates a compressed video stream from each one of the sets” is not specifically disclosed in Williams, though the fact that the video information is multiplexed for delivery [col. 7, lines 13-19] would lead one to incorporate the compression teachings of the Richardson document. Richardson discloses Virtual Network Computing, which transmits compressed video images to a client. The compression is discussed with regards to the MPEG standard [page 35, **A Single Graphics Primitive**] for compressing and encoding before transmission. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a compressor to compress the video streams before transmission to the client, in order to allow for more efficient bandwidth usage, while, at the same time, complying with compression standards for transmission.
- The claimed “transmitter for the transmission of the plurality of compressed video streams to one or more remote locations” is not

expressly disclosed in Williams, though the fact that the video information is multiplexed for delivery [col. 7, lines 13-19] would lead one to incorporate the compression teachings of the Richardson document.

Richardson discloses Virtual Network Computing, which transmits compressed video images to a client. The compression is discussed with regards to the MPEG standard [page 35, **A Single Graphics Primitive**] for compressing and encoding before transmission. It would have been obvious to one of ordinary skill in the art at the time of the invention to transmit compressed video streams to the client, in order to allow for more efficient bandwidth usage, while, at the same time, complying with compression standards for transmission.

Regarding claim 18, the claimed mixing box that multiplexes the video streams onto a cable transmission network is met by Williams, wherein he discloses a cable bus topology with modulated signals by a modulator/mixer [col. 6, line 60 – col. 7, line 19].

Regarding claim 19, Williams does not specifically disclose the claimed mixing box that multiplexes the video streams onto a satellite transmission network. Williams does, however, disclose the aforementioned cable bus topology and cable transmission network. The examiner gives Official Notice that it is notoriously well known in the art to use satellite transmission networks in place of cable transmission networks, and submits that it would have been clearly obvious to one of ordinary skill in the art at the time of the invention to implement the Williams reference accordingly in order to utilize a satellite transmission network.

Regarding claim 20, the claimed method of "compressing the video streams and providing video transmission of the compressed video streams for one or more client systems" is met as follows:

- The claimed step of "executing, at a server computer, a plurality of programs, each of the programs generating a set of display commands responsive to an Internet connection for a client that is remote from the server computer, the set of display commands representing a user interface for the Internet connection" is met by Williams, wherein he teaches a server, which maintains multiple active desktops and applications for display at remotely located STB/TV combinations [col. 3, lines 31-46]. Williams also teaches that the Internet or other communication network can be connected to the server for interaction therewith [col. 5, lines 38-45 and col. 6, lines 8-19].
- The claimed step of "identifying a bandwidth limitation corresponding to a network connection between the server computer and client" is not expressly disclosed by Williams, as discussed above. Richardson teaches that a connection speed (connection capability) is analyzed and an encoding scheme is chosen based on the capability of the connection from server to client. This means that an encoding scheme that degrades the content of the video (as many encoding scheme's do, in order to save bandwidth, therefore making it more acceptable for a lower bandwidth connection) could be used based on the connection's capabilities. Also,

the usage of the word “negotiated” by the Richardson reference means that the encoding scheme, and therefore, the quality of the video could be negotiated (varied) according to the capability of the connection. It would have been obvious to one of ordinary skill in the art at the time of the invention to identify a bandwidth limitation corresponding to a network connection, in order to save bandwidth and to send compressed encoded video streams faster than raw data streams.

- The claimed step of “degrading said set of display commands responsive to transmission bandwidth limitations, wherein said degradation of said set of display commands is performed prior to compressing said degraded sets of display commands into video streams” is not expressly disclosed by Williams, as discussed above. However, the Richardson reference does teach the degradation limitation. The Richardson reference teaches different encoding techniques, which are used for various video encoding schemes for rendering desktops and other applications generated at a server on a display of a client. This inherently teaches that a connection speed (connection capability) is analyzed and an encoding scheme is chosen based on the capability of the connection from server to client. This means that an encoding scheme that degrades the content of the video (as many encoding scheme's do, in order to save bandwidth, therefore making it more acceptable for a lower bandwidth connection) could be used based on the connection's capabilities. Also, the usage of

the word “negotiated” by the Richardson reference implies that the encoding scheme, and therefore, the quality of the video could be negotiated (varied) according to the capability of the connection. For example, the Richardson reference talks about copy-rectangle encoding, which copy’s portions of the video signal instead of using raw data signal, in order to conserve bandwidth. The copying of portions of the video signal degrades the signal from its original raw data and therefore conserves bandwidth when the image is transmitted to the client. It would have been obvious to one of ordinary skill in the art at the time of the invention to degrade the plurality of sets of display commands responsive to the transmission bandwidth limitation, in order to save bandwidth and to send compressed encoded video streams faster than raw data streams.

- The claimed step of “transmitting each of the degraded sets of display commands to one or more different remote locations, wherein the degraded sets of display commands are transmitted as compressed video streams” is not expressly disclosed in Williams, though the fact that the video information is multiplexed for delivery [col. 7, lines 13-19] would lead one to incorporate the compression teachings of the Richardson document. Richardson discloses Virtual Network Computing, which transmits compressed video images to a client. The compression is discussed with regards to the MPEG standard [page 35, **A Single Graphics Primitive**] for compressing and encoding before transmission.

It would have been obvious to one of ordinary skill in the art at the time of the invention to transmit compressed video streams to the client, in order to allow for more efficient bandwidth usage, while, at the same time, complying with compression standards for transmission.

Regarding claim 21, the claimed programs being connected to a different Internet address is met by the discussion of the server maintaining one or more processes for each desktop being rendered at the server [col. 3, lines 60-62]. The Williams reference also discloses that the Internet or other communication network can be connected to the server for interaction therewith [col. 5, lines 38-45 and col. 6, lines 8-19]. The teachings of the processes being executed (as is often done on normal desktop computers) at the server and the Internet connection lead one to realize a process/program which utilizes the Internet connection and can browse to different Internet addresses.

Regarding claim 23, the Williams and Richardson et al references disclose all of that which is discussed above with regards to claim 20. Williams does not disclose that the video streams are compressed responsive to known visual limitations at the remote location. Richardson, however, discloses a system that allows various encoding schemes in order to trade off parameters to compensate for client drawing speed (or visual limitations at the remote, client location) [page 35, **A Single Graphics Primitive Section**]. It would have been obvious to one of ordinary skill in the art at the time of the invention to compress the video streams responsive to known visual limitations, in order to allow the system to adjust to varying degrees of processing power and limitations on the server and client, in an attempt to make the system more universal.

Regarding claim 24, the Williams and Richardson et al references disclose all of that which is discussed above with regards to claim 20. Williams does not disclose that the video streams are compressed responsive to bandwidth limitations on the transmission. Richardson, however, discloses a system that allows various encoding schemes in order to trade off parameters to compensate for bandwidth limitations [page 35, **A Single Graphics Primitive Section**]. It would have been obvious to one of ordinary skill in the art at the time of the invention to compress the video streams responsive to bandwidth limitations, in order to allow the system to adjust to varying degrees of processing power and limitations on the server, client, and transmission capabilities, in an attempt to make the system more universal.

Regarding claim 26, the claimed "remote computing server system that includes a server that provides remote client access to one or more programs that are run at the server, remotely from one or more client systems, and wherein the server converts display commands generated from the one or more programs into compressed video streams" is met as follows:

- The claimed "at least one CPU running at least one program, each of the programs generating at least one set of display commands, wherein the programs generate in totality at least two sets of content independent display commands" is met by Williams, wherein he teaches that each user desktop (stored and executed at the server) is rendered and updated in its own, dedicated frame buffer before transmission of the video data (taken

from the frame buffer) to the user STB/TV combination [col. 3, lines 40-46]. The CPU is diagrammed as item 31 in Figure 3.

- The claimed “degradation module for degrading at least one of the two sets of content independent display commands prior to compression, and wherein the degradation module trades off the degradation of one of the two sets with the other” is not expressly disclosed by Williams, as discussed above. However, the Richardson reference does teach the degradation limitation. The Richardson reference teaches different encoding techniques, which are used for various video encoding schemes for rendering desktops and other applications generated at a server on a display of a client. Richardson teaches that a connection speed (connection capability) is analyzed and an encoding scheme is chosen based on the capability of the connection from server to client. This means that an encoding scheme that degrades the content of the video (as many encoding scheme's do, in order to save bandwidth, therefore making it more acceptable for a lower bandwidth connection) could be used based on the connection's capabilities. Also, the usage of the word “negotiated” by the Richardson reference means that the encoding scheme, and therefore, the quality of the video could be negotiated (varied) according to the capability of the connection. For example, the Richardson reference talks about copy-rectangle encoding, which copy's portions of the video signal instead of using raw data signal, in order to

conserve bandwidth. The copying of portions of the video signal degrades the signal from its original raw data and therefore conserves bandwidth when the image is transmitted to the client. It would have been obvious to one of ordinary skill in the art at the time of the invention to degrade the plurality of sets of display commands responsive to the transmission bandwidth limitation, in order to save bandwidth and to send compressed encoded video streams faster than raw data streams.

- The claimed “at least one compressor, which converts the two sets of display commands into two simultaneous compressed video streams” is not met by the Williams reference, because it does not teach compression of the video data before transmission. The Richardson reference teaches compression using the MPEG protocol before the data is transmitted to the client [page 35, **A Single Graphics Primitive Section**]. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a compressor to compress the video streams before transmission to the client, in order to allow for more efficient bandwidth usage, while, at the same time, complying with compression standards for transmission.
- The claimed “wherein based on the degradation of the at least one of the two sets of content independent display commands said generator trades off the compression depths of one set of display commands with the compression of a second set of display commands” is not expressly met by the Williams reference. However, as noted above, the functionality of

the typical microprocessor (as is surely present in the VNC Server of the Richardson reference) accomplishes much of the encoding and processing. One will realize that the typical microprocessor is programmed to multitask. Multitasking is defined as “a form of processing supported by most current operating systems in which a computer works on multiple tasks—roughly, separate ‘pieces’ of work—seemingly at the same time by parceling out the processor’s time among the different tasks.” The common functionality of a microprocessor would lead one to understand that two sets of compression could be accomplished at once, using a multitasking processor. Therefore, even though the Richardson reference teaches a system that compresses and encodes a single piece of image data, it is commonly accepted that multiple compression and encoding processes could take place on a standard multitasking microprocessor. This “trading off” functionality can also be referred to as “parceling” and the microprocessor parcels the processes so as to perform two processes at the same time. Furthermore, the suggestion for the Richardson reference to compress and encode multiple displays simultaneously can be found in the Williams reference, wherein Williams discloses that the “server maintains multiple, simultaneously active desktops, i.e., one desktop for each client” [col. 3, lines 34-36]. While each desktop may be maintained and rendered in a separate, dedicated frame buffer in the server PC, the server PC only contains one processor,

and therefore, must use multitasking in order to accomplish multiple, simultaneous desktops. It would have been obvious to one of ordinary skill in the art at the time of the invention to include a multitasking system, in order to support processing and encoding of multiple streams of display commands at once, as is commonly done with multitasking processors.

- The claimed "compression of the sets utilizing at least one shared resource of the generator" is taught by the Williams reference. While the Williams reference does not teach the compression aspect (see the aforementioned MPEG protocol mentioned in the Richardson reference), it does teach that the video buffers and rendering take place using one CPU (the one shared resource for all of the desktops and applications to be rendered and transmitted) [col. 5, lines 15-27]. It would have been obvious to one of ordinary skill in the art at the time of the invention to transmit compressed video streams to the client, in order to allow for more efficient bandwidth usage, while, at the same time, complying with compression standards for transmission.

Regarding claim 27, the Williams and Richardson references teach all of that which is discussed above with regards to claim 26. The Williams reference further discloses that the shared resource is a CPU [col. 5, lines 15-27].

Regarding claim 28, the Williams and Richardson references teach all of that which is discussed above with regards to claim 26. The Williams reference further discloses that the shared resource is a memory resource [col. 5, lines 15-27].

Regarding claim 30, the Williams and Richardson references teach all of that which is discussed above with regards to claim 26. The Williams reference does not disclose that the trade off comprises trading off quality between the two command sets. The Richardson reference teaches trading off parameters (such as client drawing speed or quality based on encoding scheme) within the system, in order to accomplish multiple desktops (as taught by Williams) [page 35, **A Single Graphics Primitive and Adaptive Update Sections**]. It would have been obvious to one of ordinary skill in the art at the time of the invention to trade off quality between two command sets, in order to keep the system continually running and to transmit video data to users in an efficient and timely manner.

Regarding claim 31, the Williams and Richardson references teach all of that which is discussed above with regards to claim 26. The Williams reference does not disclose that the trade off comprises trading off frame rate between the two command sets. The Richardson reference teaches adaptive updating, or adapting the frame rate in order to account for faster or slower client system, in order to accomplish multiple desktop transmissions simultaneously (as taught by Williams) [page 35, **A Single Graphics Primitive and Adaptive Update Sections**]. It would have been obvious to one of ordinary skill in the art at the time of the invention to trade off frame rate between two command sets, in order to keep the system continually running and to transmit video data to users in an efficient and timely manner.

Regarding claim 32, the Williams and Richardson references teach all of that which is discussed above with regards to claim 26. The Williams reference meets the

claimed step of multiplexing the compressed video streams onto a single transmission bandwidth. The discussion of the video data being modulated and transmitted onto the video bus meets the claimed multiplexing capabilities [col. 7, lines 13-19]. Williams does not teach the fact that the video signals are compressed. The Richardson reference teaches that the video is compressed before transmission [page 35, **A Single Graphics Primitive Section**]. It would have been obvious to one of ordinary skill in the art at the time of the invention to transmit compressed video streams to the client, in order to allow for more efficient bandwidth usage, while, at the same time, complying with compression standards for transmission.

Regarding claim 41, the claimed “system as recited in claim 17, wherein an entire display comprising the plurality of sets of display commands is built prior to being compressed and such that the plurality of sets of display commands correspond to a single display” is partially met by the Williams reference, wherein he teaches that the “server can maintain and execute one or more processes for each of the n desktops 3” [col. 3, lines 60-62]. In other words, each desktop can consist of multiple processes (display commands). The single desktop forms the screen that is displayed at the “thin” client viewer device [col. 3, lines 40-46]. The only feature that the Williams reference does not teach is that the display’s are compressed prior to transmission, though the fact that the video information is multiplexed for delivery [col. 7, lines 13-19] would lead one to incorporate the compression teachings of the Richardson document. Richardson discloses Virtual Network Computing, which transmits compressed video images to a client. The compression is discussed with regards to the MPEG standard [page 35, **A**

**Single Graphics Primitive]** for compressing/encoding before transmission. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a compressor to compress the video streams before transmission to the client, in order to allow for more efficient bandwidth usage, while, at the same time, complying with compression standards for transmission.

Regarding claim 42, the claimed “system as recited in claim 41, wherein the plurality of sets of display commands overlap in a virtual display space” is met by the Williams teaching of the buffer that renders each desktop in the server PC. Just as a desktop on a PC have overlapping processes, so does the buffer (or virtual display space) in the server PC, which sends these displays to the “thin” clients [col. 3, lines 40-46].

Regarding claim 43, the claimed “system as recited in claim 17, wherein the sets of display commands are compressed individually on a block by block basis and without building an entire display with the display commands first” is not explicitly met by the Williams reference. The Richardson reference teaches copy-rectangle encoding, which uses rectangles of the display commands to compress and degrade the screen and provide it to the transmission module for transmission to the clients [**A Single Graphics Primitive**]. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a compressor to compress the video streams before transmission to the client, in order to allow for more efficient bandwidth usage, while, at the same time, complying with compression standards for transmission.

Regarding claim 44, the claimed “method as recited in claim 26, wherein the server includes a first computer that runs the at least one program and a second computer that includes the at least one compressor for converting the two sets of display commands into compressed video streams” is not met expressly by the Williams or the Richardson reference. Although both references teach, in combination, those features discussed above with reference to claim 26, neither teaches that the server includes two computers, one for running the application program, and another for running the compressor for converting the commands into compressed video streams. Since Williams and Richardson teach the claimed technical features and simply lack the limitation that the features are implemented in two computers, the Examiner cites *Nerwin v. Erlichman*, 168 USPQ 177, 179, which teaches that since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. In other words, Williams and Richardson disclose the claimed invention except for the fact that the server includes two separate computers. It would have been clearly obvious to one having ordinary skill in the art at the time of the invention to implement the technical features of the single server using two separate computers, since it has been held the constructing a formerly integral structure in various elements involves only routine skill in the art. The Richardson reference even goes as far as to suggest conserving server processing speed [**A Single Graphics Primitive**], which separating the server capabilities into two computers would clearly aid.

***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Joseph et al (USPN 5,819,034) disclose a system for executing applications in a multimedia system remotely.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael R. Shannon who can be reached at (571) 272-7356 or [Michael.Shannon@uspto.gov](mailto:Michael.Shannon@uspto.gov). The examiner can normally be reached by phone Monday through Friday 8:00 AM – 5:00PM, with alternate Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller, can be reached at (571) 272-7353.

**Any response to this action should be mailed to:**

Please address mail to be delivered by the United States Postal Service (USPS) as follows:

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Effective January 14, 2005, except correspondence for Maintenance Fee payments, Deposit Account Replenishments (see 1.25(c)(4)), and Licensing and Review (see 37 CFR 5.1(c) and 5.2(c)), please address correspondence to be delivered

by other delivery services (Federal Express (Fed Ex), UPS, DHL, Laser, Action, Purolater, etc.) as follows:

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**Or faxed to: (571) 273-8300**

**Hand-delivered responses should be brought to:**

Randolph Building  
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Alexandria, VA 22314

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to customer service whose telephone number is **(571) 272-2600**.

Michael R Shannon  
Examiner  
Art Unit 2614

Michael R Shannon  
November 10, 2005



JOHN MILLER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600